SIEMENS



SIPART PS2

Smart Valve Positioner

Integral Volume Booster

Installation Instructions

Edition 4/2015

Answers for industry.

SIEMENS

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Smart Valve Positioner Integral Volume Booster Installation Instructions

Hardware Installation Manual

4/2015

A5E35229820-AB

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER
indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING
indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION
indicates that minor personal injury can result if proper precautions are not taken.

NOTICE
indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

⚠ WARNING
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Table of contents

Tables

Figures

Introduction 1

1.1 Purpose of this documentation

These instructions are a brief summary of important features, functions and safety information, and contain all information required for safe use of the device. Read the instructions carefully prior to installation and commissioning. In order to use the device correctly, first review its principle of operation.

The instructions are aimed at persons who mechanically assemble the device, connect it electrically, and start it up.

To achieve optimum usage of the device, read the detailed version of the instructions.

See also

Process instrumentation catalog (http://www.siemens.com/processinstrumentation/catalogs)

Product information on SIPART PS2 in the Internet (http://www.siemens.com/sipartps2)

1.2 History

The contents of these instructions are regularly reviewed and corrections are included in subsequent editions. We welcome suggestions for improvement.

The following table shows the most important changes in the documentation compared to each previous edition.

Edition	Remarks
10/2014	First edition of Installation Instructions for the SIPART PS2 Integral Volume Booster.
4/2015	Second edition of Installation Instructions for the SIPART PS2 Integral Volume Booster. This document replaces all previous instructions for use.

1.3 Purpose

The electropneumatic positioner is used for the continuous control of process valves with pneumatic drives in the following industries.

- Chemicals
- Oil and gas
- Energy production
- Food and beverages
- Pulp and paper

- Water/waste water
- Pharmaceutical industry
- Offshore plants

1.4 Checking the consignment

1. Check the packaging and the delivered items for visible damage.
2. Report any claims for damages immediately to the shipping company.
3. Retain damaged parts for clarification.
4. Check the scope of delivery by comparing your order to the shipping documents for correctness and completeness.

⚠ WARNING
Using a damaged or incomplete device
Danger of explosion in hazardous areas. • Do not use damaged or incomplete devices.

1.5 Transportation and storage

To guarantee sufficient protection during transport and storage, observe the following:

- Keep the original packaging for subsequent transportation.
- Devices/replacement parts should be returned in their original packaging.
- If the original packaging is no longer available, ensure that all shipments are properly packaged to provide sufficient protection during transport. Siemens cannot assume liability for any costs associated with transportation damages.

⚠ CAUTION
Insufficient protection during storage
The packaging only provides limited protection against moisture and infiltration. • Provide additional packaging as necessary.

1.6 Notes on Warranty

The sales contract contains the entire obligation of Siemens. The warranty contained in the contract between the parties is the sole warranty of Siemens. Any statements continued herein do not create new warranties or modify the existing warranty.

For warranty and non-warranty service, refer to Customer/Product Support in this publication.
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Siemens Industry, Inc. assumes no liability for errors or omissions in this document or for the application and use of information in this document. The information herein is subject to change without notice.

Procedures in this document have been reviewed for compliance with applicable approval agency requirements and are considered sound practice. Neither Siemens Industry, Inc. nor these agencies are responsible for product uses not included in the approval certification(s) or for repairs or modifications made by the user.

Safety notes 2

This device left the factory in good working condition. In order to maintain this status and to ensure safe operation of the device, observe these instructions and all the specifications relevant to safety.

Observe the information and symbols on the device. Do not remove any information or symbols from the device. Always keep the information and symbols in a completely legible state.

2.1 Warning Symbols

Symbol	Explanation
	Consult operating instructions
	Hot surface
	Dangerous electrical voltage
	Corrosive materials
	Toxic materials
	Isolate the device from power using a circuit-breaker
	Protect the device from impact otherwise loss of degree of protection
	Protective insulation; device in protection class II

2.2 Laws and directives

Observe the test certification, provisions and laws applicable in your country during connection, assembly and operation. These include, for example:

- National Electrical Code (NEC - NFPA 70) (USA)
- Canadian Electrical Code (CEC) (Canada)

Further provisions for hazardous area applications are for example:

- IEC 60079-14 (international)
- EN 60079-14 (EC)

2.3 Conformity with European directives

The CE marking on the device shows conformity with the regulations of the following European guidelines:

Electromagnetic Compatibility EMC 2004/108/EC	Directive of the European Parliament and of the Council on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC.
Atmosphère explosible ATEX 94/9/EC	Directive of the European Parliament and the Council on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres.
LVD 2006/95/EC	Directive of the European Parliament and of the Council of the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.

The applied standards can be found in the EC conformity declaration of the device.

WARNING

Improper device modifications

Danger to personnel, system and environment can result from modifications to the device, particularly in hazardous areas.

- Only carry out modifications that are described in the instructions for the device. Failure to observe this requirement cancels the manufacturer's warranty and the product approvals.

Qualified personnel for hazardous area applications

Persons who install, connect, commission, operate, and service the device in a hazardous area must have the following specific qualifications:

- They are authorized, trained or instructed in operating and maintaining devices and systems according to the safety regulations for electrical circuits, high pressures, aggressive, and hazardous media.
- They are authorized, trained, or instructed in carrying out work on electrical circuits for hazardous systems.
- They are trained or instructed in maintenance and use of appropriate safety equipment according to the pertinent safety regulations.

WARNING

Unsuitable device for the hazardous area

Danger of explosion.

- Only use equipment that is approved for use in the intended hazardous area and labelled accordingly.

2.4 Loss of safety of device with type of protection "Intrinsic safety Ex i"

WARNING

Loss of safety of device with type of protection "Intrinsic safety Ex i"

If the device has already been operated in non-intrinsically safe circuits or the electrical specifications have not been observed, the safety of the device is no longer ensured for use in hazardous areas. There is a danger of explosion.

- Connect the device with type of protection "Intrinsic safety" solely to an intrinsically safe circuit.
- Observe the specifications for the electrical data on the certificate and/or in Chapter "Technical data".

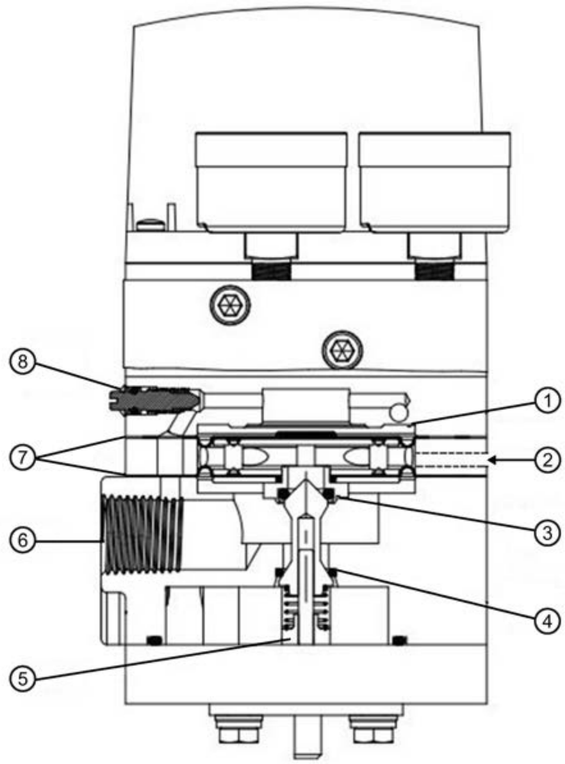
Theory of Operation

3

Input pressure from the positioner acting upon the effective area of the upper diaphragm, produces a force which is opposed, in a 1:1 ratio, by the force from output pressure acting on the lower diaphragm. A change in input pressure will create a differential requiring pilot action to re-balance. An increase will depress the diaphragm assembly, opening the pilot valve and admitting supply air to the output until balance is restored. Conversely, a decrease will allow the diaphragm assembly to rise, opening the exhaust seat and lowering the output to match input. These units incorporate a stabilizing bypass needle valve which allows input to pass directly to output for small or gradual input changes. Since the booster is bypassed, there is no loss of accuracy and, with proper needle valve setting, steady-state stability can be maintained. The appropriate needle valve setting depends on the size of the actuator. Typically, the larger the actuator, the more the needle valve can be closed and still maintain stability.

Note

The Integral Volume Booster, as well as any other external volume booster, will change the double acting SIPART PS2 operation upon loss of supply air. Without the high flow option module or external volume booster, the double acting PS2 traps output pressure upon loss of supply air. With the Integral Volume Booster or external volume booster, the output pressures are vented and the valve position cannot be determined upon loss of supply air. The Integral Volume Booster has no effect on the SIPART PS2 operation upon loss of control signal or electrical power, see SIPART PS2 manual for details.



①	Input	⑤	Supply
②	Exhaust	⑥	Output
③	Exhaust Seat	⑦	Diaphragms
④	Supply Seat	⑧	Bypass Valve

Figure 3-1 Single Acting Booster

Installing/mounting 4

4.1 Basic Safety Instructions

4.1.1 Improper Commissioning

⚠ WARNING
Improper commissioning These instructions are valid solely for the installation and commissioning of the Booster. It is absolutely necessary that you follow the safety rules, notes and requirements of the compact operating instructions before assembly, commissioning and also during operation of the positioner. You can find the compact operating instructions on the supplied CD or on the Internet under: http://www.siemens.com/processinstrumentation/documentation (http://www.siemens.com/processinstrumentation/documentation)

⚠ WARNING
High operating force with pneumatic actuators Risk of injury when working on control valves due to the high operating force of the pneumatic actuator. • Please observe the corresponding safety instructions for the pneumatic actuator in use.

⚠ WARNING
Lever for position detection Danger of crushing and shearing with mounting kits which use a lever for position detection. During commissioning and ongoing operation, severing or squeezing of limbs could occur as a result of the lever. Risk of injury when working on control valves due to the high operating force of the pneumatic actuator. • Do not reach into the range of motion of the lever following mounting of the positioner and mounting kit.

WARNING

Impermissible accessories and spare parts

Danger of explosion in areas subject to explosion hazard.

- Only use original accessories or original spare parts.
- Observe all relevant installation and safety instructions described in the instructions for the device or enclosed with the accessory or spare part.

WARNING

It is possible to damage the cover gasket

If the cover gasket is not positioned correctly in the groove of the base plate, it could be damaged when the cover is mounted and screwed tight.

- Therefore make sure that the gasket is seated correctly.

WARNING

Open cable inlet or incorrect cable gland

Danger of explosion in hazardous areas.

- Close the cable inlets for the electrical connections. Only use cable glands or plugs which are approved for the relevant type of protection.

4.1.2 Exceeded maximum ambient or process media temperature

WARNING

Exceeded maximum ambient or process media temperature

Danger of explosion in hazardous areas.

Device damage.

- Make sure that the maximum permissible ambient and process media temperatures of the device are not exceeded. Refer to the information in Chapter 4.2.

4.1.3 Unsuitable Compressed Air

NOTICE

Caution

Use of process fluids other than instrument air is not recommended. No claim is made as to the suitability of this product for use with other process fluids.

4.1.4 Prior to working on the control valve

CAUTION

Please note the following before working on the control valve and when attaching the positioner

Danger of injury.

- Prior to working on the control valve, you must move the control valve into a completely unpressurized. Proceed as follows:
  - Depressurize the actuator chambers.
  - Switch off the supply air PZ.
  - Lock the valve in its position.
- Make sure that the valve has reached the unpressurized state.
- If you interrupt the pneumatic auxiliary power to the positioner, the unpressurized position may only be reached after a certain waiting time.
- When mounting, observe the following sequence imperatively to avoid injuries or mechanical damage to the positioner/mounting kit:
  - Mount the positioner mechanically.
  - Connect the electrical auxiliary power supply.
  - Connect the pneumatic auxiliary power supply.
  - Commission the positioner.

WARNING

Mechanical impact energy

In order to ensure the degree of protection of the housing (IP66), protect the housing versions of the positioners listed here from mechanical impact energy:

- 6DR5..3; not greater than 2 Joule
- 6DR5..0; not greater than 1 Joule
- 6DR5..1 with inspection window; not greater than 1 Joule

4.1.5 Proper Mounting

4.1.5.1 Incorrect mounting

NOTICE

Incorrect mounting

The device can be damaged, destroyed, or its functionality impaired through improper mounting.

- Before installing ensure there is no visible damage to the device.
- Make sure that process connectors are clean, and suitable gaskets and glands are used.

4.1.5.2 Loss of degree of protection

CAUTION

Loss of degree of protection

Damage to device if the enclosure is open or not properly closed. The degree of protection specified on the nameplate is no longer guaranteed.

- Make sure that the device is securely closed.

4.2 Integral Volume Booster

The Integral Volume Booster (IVB) is an option for the SIPART PS2 positioner that provides high flow capacity for use on control valve actuators that require very fast stroking speed. In addition, it can respond to small or gradual input changes without jeopardizing steady-state accuracy or stability. The design is based on field proven pneumatic booster relay technology.

The IVB contains an integral stabilizing bypass valve. The bypass opening is controlled by a screwdriver adjustment in the body of the booster which permits tuning for optimal dynamic response. It is recommended that the bypass valve be opened 1/4-turn (counter-clockwise) at initial start-up.

Specifications

Table 4- 1 Climate Class

Storage	1K5, but -40 …+80 °C (1K5, but -40 …+176 °F)
Transport	2K4, but -40 …+80 °C (2K4, but -40 …+176 °F)
Operation	4K3, but -30 …+80 °C (4K3, but -22 …+176 °F)

Note

SA = Single Acting, DA = Double Acting

Table 4- 2 Weight

	Makrolon		**Explosion Proof**	
	With PS2	Kit only	With PS2	Kit only
Booster, SA	4.0 kg (8.8 lbs)	2.9 kg (6.5 lbs)	7.9 kg (17.4 lbs)	3.3 kg (7.3 lbs)
Booster, DA	5.3 kg (11.7 lbs)	4.3 kg (9.4 lbs)	9.3 kg (20.5 lbs)	4.7 kg (10.4 lbs)

Connections

- Pneumatic Connections - 1/2" NPT or G 1/2
- Gauge Connections: 1/8" NPT or G 1/8

Auxiliary Power (air supply)

Compressed air, carbon dioxide (CO2), nitrogen (N2) and noble gases

- Pressure
  1.4...7 bar (20.3...101.5 psi)
- Air Supply to ISO 8573-1
- Air Consumption
  1.2 x 10^{-2} Nm^3/h (0.007SCFM)

Vibration Resistance

- Harmonic Oscillations compliant to ISA-S75.13
- Harmonic oscillations
  150 m/s^2 (492 ft/s^2)
- Bumping (half-sine)
  6ms, 1000 shocks/axis

Gauge

1/8" - 18 NPT or G 1/8 thread with Stainless Steel case in: Mpa, bar, psi. IP66 Rating

Flow Capacity

Cv 2.0

Ordering Information

The booster can be ordered as a kit to add to an existing positioner in the field, or can ordered as an option on a new unit.

Kit Numbers

6DR4004-1RK Single Acting for positioner with Makrolon enclosure, ½" NPT connections.

6DR4004-2RK Double Acting for positioner with Makrolon enclosure, ½" NPT connections.

6DR4004-1RQ Single Acting for positioner with flameproof enclosure, ½" NPT connections.

6DR4004-2RQ Double Acting for positioner with flameproof enclosure, ½" NPT connections.

6DR4004-1RJ Single Acting for positioner with Makrolon enclosure, G 1/2

6DR4004-2RJ Double Acting for positioner with Makrolon enclosure, G 1/2

6DR4004-1RP Single Acting for positioner with flameproof enclosure, G 1/2

6DR4004-2RP Double Acting for positioner with flameproof enclosure, G 1/2

Model Option Codes

R1K Single Acting for positioner with Makrolon enclosure, ½“ NPT connections.

R2K Double Acting for positioner with Makrolon enclosure, ½” NPT connections.

R1Q Single Acting for positioner with flameproof enclosure, ½” NPT connections.

R2Q Double Acting for positioner with flameproof enclosure, ½” NPT connections.

R1J Single Acting for positioner with Makrolon enclosure, G 1/2

R2J Double Acting for positioner with Makrolon enclosure, G 1/2

R1P Single Acting for positioner with flameproof enclosure, G 1/2

R2P Double Acting for positioner with flameproof enclosure, G 1/2

4.3 Installation

If the booster kit is to be stocked, stored, or shipped to another location prior to piping, make sure that the factory installed plastic plugs are in the ports to prevent entry of moisture, dirt, or other contaminants.

Required Tool List

- Allen Wrench (supplied)
- Adjustable Wrench
- 10mm Deep Socket and Socket Wrench
- 5mm Hex Wrench

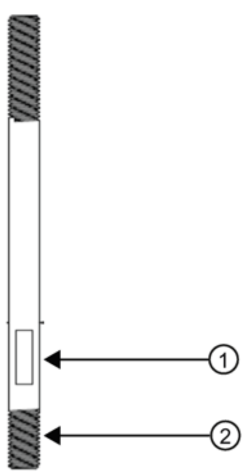
Mounting the IVB (if not factory installed) Makrolon Positioner Housing (double acting shown)

1. Remove extension shaft from the kit.



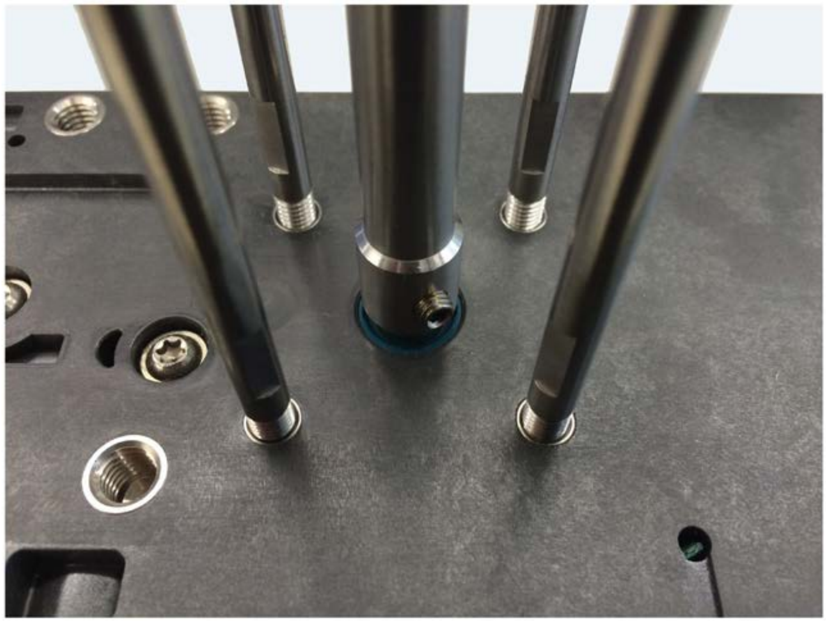
2. When assembling extension shaft to positioner, be sure the shaft on the positioner is fully inserted and setscrew is tightened against flat of positioner shaft. Verify shaft is secure.





① Flat
② Short threaded end goes into the positioner.

3. Hand-tighten the four studs into the four mounting holes around the positioner shaft. Studs will be tightened later. Before assembling booster module, rotate positioner shaft so set-screw is pointing towards positioner exhaust port (bronze sintered screen).



4. Slide the "booster module" over the studs and secure with lock washers and nuts on the four studs. Torque to 3 Nm (2.2 ft lbs). Do not exceed 5 Nm (~3.7 ft lbs) maximum.

⚠ WARNING
Pinch Warning Can cause severe personal injury. Keep hands and fingers clear.

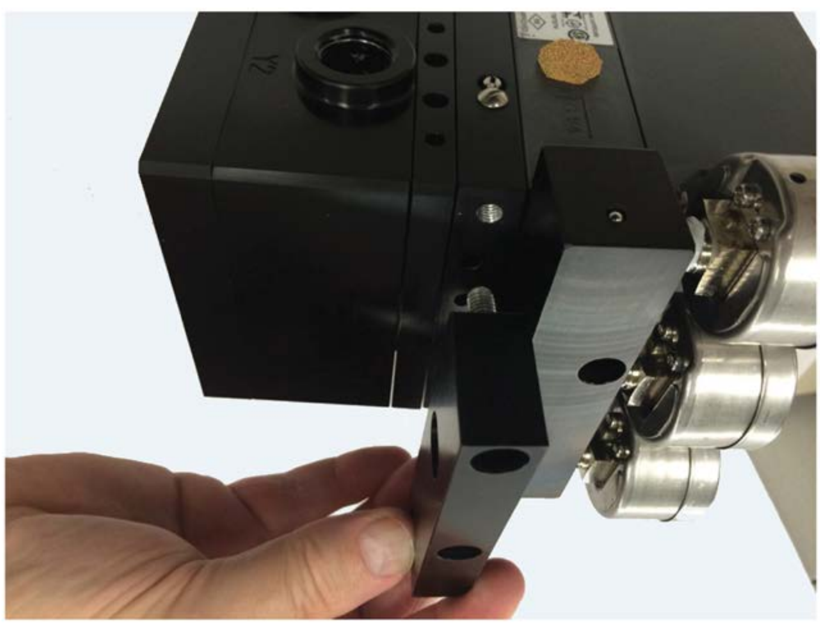


5. Before adding gauge block be sure pneumatic plastic plugs are removed from all ports. Attached the gauge block with two bolts and lock washers. Make sure the O-rings are installed in the block before attaching it to the positioner. For single acting there are 2 large O-rings for the PS2 ports. For the double acting there are 3 large O-rings for the PS2 ports. Lightly compress the lock washers; the bolts will be fully tightened later.



6. Attach the connecting block with two bolts and lock washers into the booster and two bolts and lock washers into the gauge block. Make sure all six O-rings are installed in the connecting block before attaching it to the booster and the gauges block (see figure below). Lightly compress the lock washers; the bolts will be fully tightened later.









7. Tighten the gauge block bolts to the positioner. Tighten the connecting block bolts to the booster. Lastly tighten the connection block to gauge block bolts.

8. Attach the mounting bracket to the booster with 4 lock washers and nuts. Torque to 5 Nm (3.7 ft lbs) maximum.



Note

The mounting bracket is not part of this kit. The mounting solution for the specific actuator must be specified separately. Additional mounting holes are available behind the booster which match the additional holes also available in the SIPART PS2 itself. Some brackets, especially those for linear application, require these holes for mounting

Note

In certain linear applications when using a low clearance lever it will be necessary to extend the shaft. PN16152-3028 Shaft Extender is included. Refer to installation drawing A5E34908432B (16230-160) in Appendix A for examples.

9. Mount positioner on actuator.

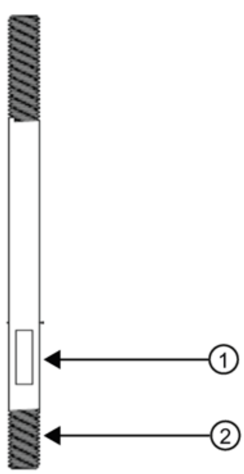
Mounting the IVB (if not factory installed) Ex d Flameproof Housing (double acting shown)

1. Remove extension shaft from the kit.



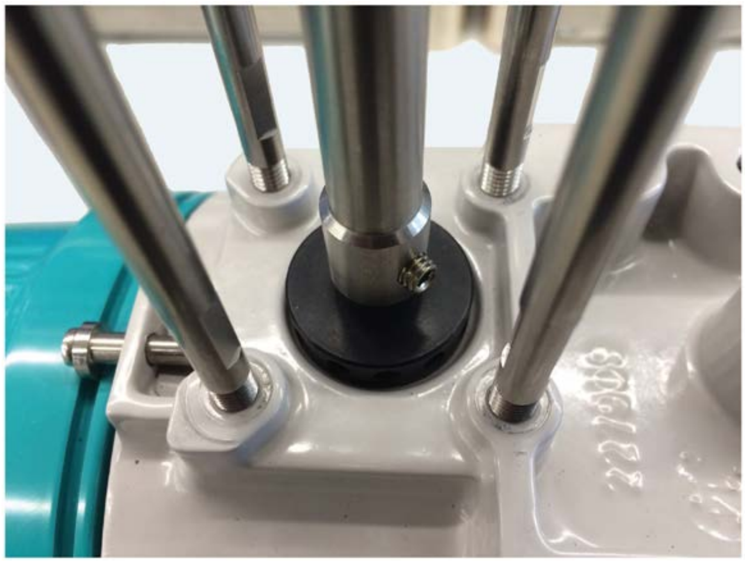
2. When assembling extension shaft to positioner, be sure the shaft on the positioner is fully inserted and setscrew is tightened against flat of positioner shaft. Verify shaft is secure





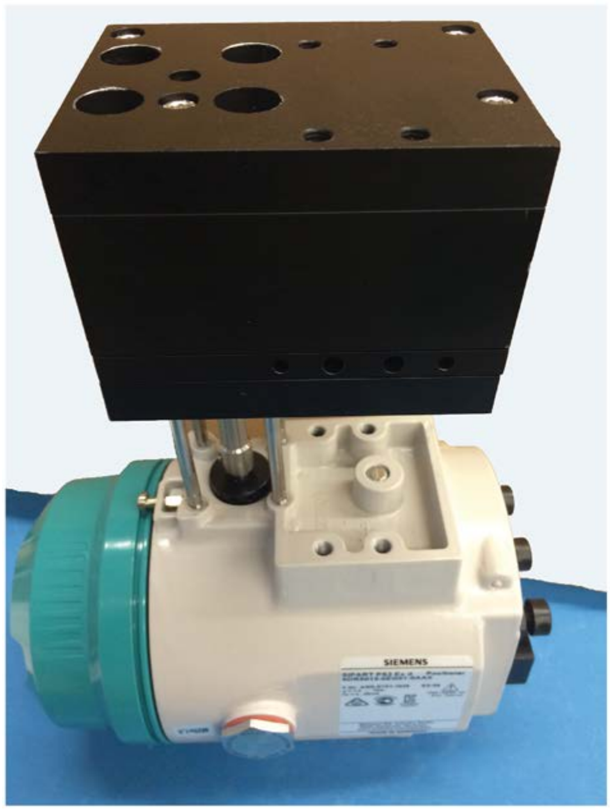
① Flat
② Short threaded end goes into the positioner.

3. Screw the studs into the four mounting holes around the positioner shaft. Do NOT rotate studs to bottom of holes. Only rotate studs a minimum of 5 full rotations, max 9 full stud rotations. Studs will be tightened later. Before assembling booster module, rotate positioner shaft so set-screw is pointing towards positioner conduit entry.



⚠ WARNING
Pinch Warning
Can cause severe personal injury.
Keep hands and fingers clear.

4. Slide the "booster module" over the studs such that the 4 M8 threaded holes align with the 4 M8 threaded holes on the positioner. Secure with lock washers and nuts on the four studs (max. torque 40" lbs).





5. Before adding gauge block be sure pneumatic plastic plugs are removed from all ports. Assemble O-rings to gauge and connecting blocks with two bolts and lock washers. Loosely attach the gauge block with two bolts and lock washers. Make sure the O-rings

are installed in the block before attaching it to the positioner. There are 3 large O-rings for the PS2 ports. The bolts will be fully tightened later.



Figure 4-1 O-ring Gauge

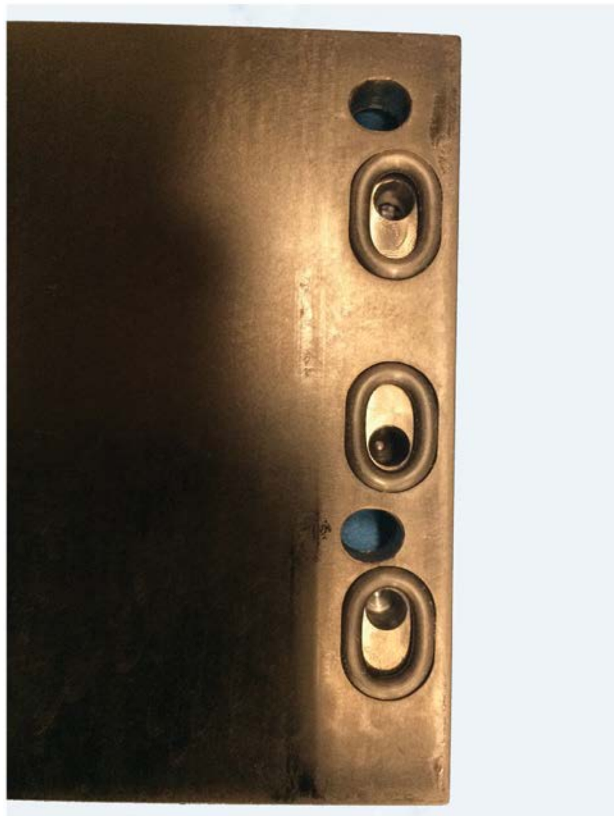


Figure 4-2 O-ring Connection



Note

Important

Follow bolt tightening sequence procedure carefully.

6. Secure the connecting block with two bolts and lock washers into the booster (refer to Connection Block figure). Make sure six O-rings are installed in the block before attaching it to the positioner. There are 3 O-rings for the booster and 3 O-rings for the gauge block. Now secure connecting block to gauge block (refer to Gauge Connection figure).

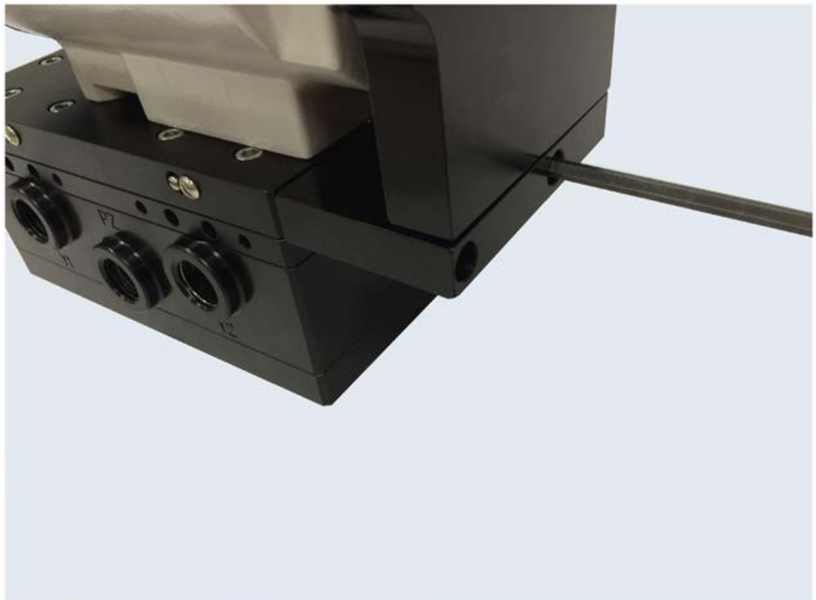


Figure 4-3 Connecting Block

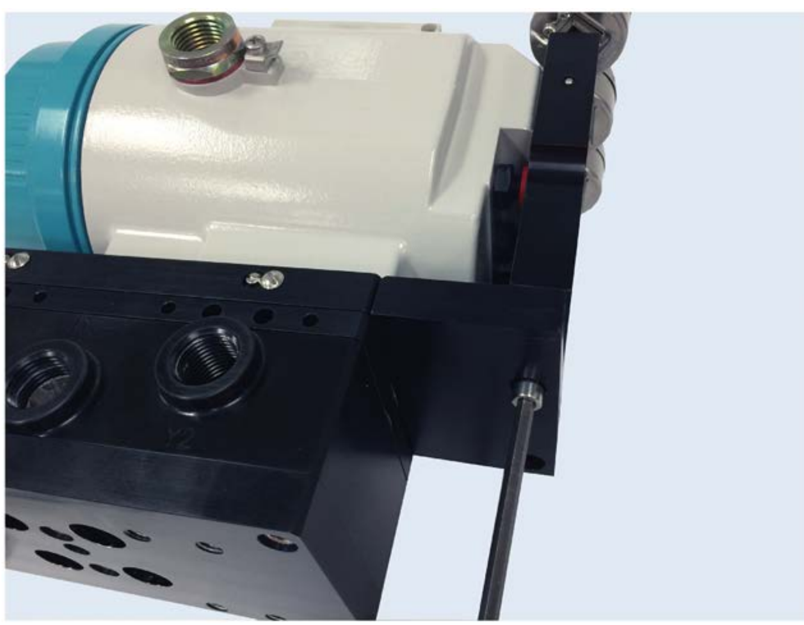


Figure 4-4 Gauge Connection

7. Tighten the gauge block bolts to the positioner.

8. Attach the mounting bracket to the booster with 4 lock washers and nuts.



Note

The mounting bracket is not part of this kit. The mounting solution for the specific actuator must be specified separately. Additional mounting holes are available behind the booster which match the additional holes also available in the SIPART PS2 itself. Some brackets, especially those for linear application, require these holes for mounting.

Note

In certain linear applications when using a low clearance lever it will be necessary to extend the shaft. PN16152-3028 Shaft Extender is included. Refer to installation drawing A5E34908432B (16230-160) in Appendix A for examples.

9. Mount positioner on actuator.

Mounting the SIPART PS2/IVB (factory installed)

1. Attach the mounting bracket to the booster with 4 lock washers and nuts.
2. Mount positioner on actuator.

4.4 Pneumatic Connections

Refer to installation drawing (assembly with dimensions) for the locations of the pneumatic connections. The supply and output connections are 1/2" NPT or G 1/2. Ideally the SIPART PS2/IVB assembly should be close coupled to the actuator. Tubing of 1/2" O.D. or larger is recommended for piping. Blow out all piping before connections are made to prevent the possibility of dirt or chips entering the relay. Use pipe sealant sparingly, and then only on the male threads. A non-hardening sealant is strongly recommended. Connect the relay to a source of clean, dry, oil-free instrument air. See Instrument Air Requirements.

NOTICE
Caution Pressure in excess of 7 bar (101.5 psi)i to any connection may cause damage to the relay. In any event, maximum actuator pressure should never be exceeded.

Instrument Air Requirements

NOTICE
Caution Use of process fluids other than instrument air is not recommended. No claim is made as to the suitability of this product for use with other process fluids.

NOTICE
Caution Synthetic compressor lubricants in the air system at the instrument may cause the instrument to fail.

There are many types of synthetic compressor lubricants. Some may not be compatible with materials used in construction of the relay. Wetting of these materials with such an oil mist or oil vapor, etc., may cause deterioration and may ultimately result in the failure of the instrument. Refer to Specifications for a list of materials.

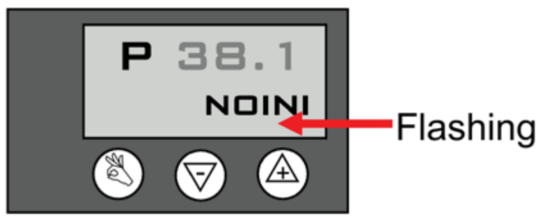
The requirements for a quality air supply can be found in the International Organization for Standardization (ISO) 8573-1.

4.5 Device Setup

The Integral Volume Booster must be setup BEFORE initializing the SIPART PS2 valve positioner. The “NOINI” (no initialization) mode, see display example below, can be used to perform this setup. The NOINI mode will appear once proper electrical power is applied to a brand-new SIPART PS2 valve positioner.

If the high flow option module is being retrofitted to an initialized SIPART PS2 valve positioner, follow steps 1 through 6 to activate the NOINI mode:

1. Press and hold [HAND] button to enter configuration mode.
2. The configuration parameter number will appear in the lower left hand corner of display.
3. Toggle the [HAND] button until parameter “4.INITA” appears on the bottom of display.
4. Press and hold the [-] minus button until “no” appears on the top of the display.
5. Press and hold [HAND] button to exit configuration mode.
6. Display will be similar to the following (numerical value will vary).



Note

Once all pneumatic connections are made, and the appropriate supply pressure is the applied, moving the valve assembly throughout the entire valve stroke can be accomplished using the: Plus [+] and/or Minus [-] button/s.

– Turn needle valve(s) ¼ turn open.
– Pressing one button delivers air slowly to the actuator.
– Pressing and holding one button and then pressing and holding the other button will deliver air quickly to the actuator.

  To move valve assembly in the opposite direction reverse pushbutton sequence.
– If the valve assembly doesn’t move, it may be possible that the valve assembly is at the actuator end-stop position. Therefore, alternate pushbutton sequence to deliver air in the opposite direction.

7. Using [+] plus and [-] minus buttons, move valve assembly to each end-travel position.

   Since numerical value on display is an un-calibrated value, use a mechanical indicator on valve assembly to determine actual valve position.
8. Release pushbuttons to hold valve assembly to some mid-travel position. Once pushbuttons are released valve assembly should not move.

   If valve assembly continues to move, adjust high flow needle valve/s a quarter turn counter-clockwise.
9. Repeat step 8 until valve assembly can be stopped at any travel position.

   If step 9 cannot be accomplished, check for air leaks in valve assembly.
10. Setup of High flow option module is complete once valve assembly can be stopped at any travel position by releasing pushbuttons.
11. Using SIPART PS2 leaflet instructions or manual, initialize SIPART PS2 valve positioner.

Service and maintenance 5

5.1 Maintenance

These instruments do not normally require any routine maintenance.

NOTICE
Caution
Before disassembling the unit, make sure all air pressure to the unit is turned off

Screens

The screens are located in the air supply and output connections. A screen must be removed from its seat to be cleaned. Screens can be damaged during removal, and spare screens should be on hand (P/N A5E35246369).

1. Turn supply air off.
2. Remove a screen with a scribe by carefully pulling on and around the edge of the screen.
3. Clean the screen by blowing through in the reverse direction with compressed air. Soak in solvent or clean mechanically if necessary.
4. Insert the screen until it bottoms using an object, such as the eraser end of a pencil, which will not cause damage.

Shipping and Storage

If the booster kit is to be stocked, stored, or shipped to another location prior to piping, make sure that the factory installed plastic plugs are in the ports to prevent entry of moisture, dirt, or other contaminants.

Customer/Product Support

This section provides the Internet site addresses, e-mail addresses, telephone numbers, and related information for customers to access Siemens product support.

When contacting Siemens for support:

- Please have complete product information at hand:
  - For hardware, this information is provided on the product nameplate (part number or model number, serial number, and/or version).
  - For most software, this information is given in the Help > About screen.
- If there is a problem with product operation:
  - Is the problem intermittent or repeatable? What symptoms have been observed?
  - What steps, configuration changes, loop modifications, etc. were performed before the problem occurred?
  - What status messages, error messages, or LED indications are displayed?
  - What troubleshooting steps have been performed?
  - Is the installation environment (e.g. temperature, humidity) within the product's specified operating parameters? For software, does the PC meet or exceed the minimum requirements (e.g. processor, memory, operating system)?
- A copy of the product Service Instruction, User's Manual, or other technical literature should be at hand. The Siemens public Internet site (see the table) has current revisions of technical literature, in Portable Document Format, for downloading.
- To send an instrument to Siemens for repair, request a Return Material Authorization (RMA).

NOTICE
Important An instrument must be thoroughly cleaned (decontaminated) to remove any process materials, hazardous materials, or blood borne pathogens prior to return for repair. Read and complete the Siemens RMA form(s)

Support is available through an online Support Request service; a link is provided in the table below.

For support and the location of your local Siemens representative, refer to the table below for the URL of the Process Instrumentation (PI) portion of the Siemens public Internet site. Once at the site, click Support in the right column and then Product Support. Next select the type of support desired: sales, technical (see the table below), documentation, or software.

Online Support Request	http://www.siemens.com/automation/support-request (http://www.siemens.com/automation/support-request)
Technical Support	1-800-333-7421; 8 a.m. to 4:45 p.m. eastern time, Monday through Friday (except holidays)
Customer Service & Returns	1-800-365-8766 (warranty and non-warranty)
Public Internet Site	http://www.usa.siemens.com/pi (http://www.usa.siemens.com/pi)
Technical Publications in PDF	Click the above link to go to the Siemens Internet site and then click Process Instrumentation. In the column to the right, click Support > Manuals. In the column to the left, select the product line (e.g. Pressure or Temperature or Controllers) to open navigation and search panes. Note: Navigation may change as the site evolves.

Dimension drawings 6

6.1 Installation and Outline Drawings

The following installation drawings are used with this device:

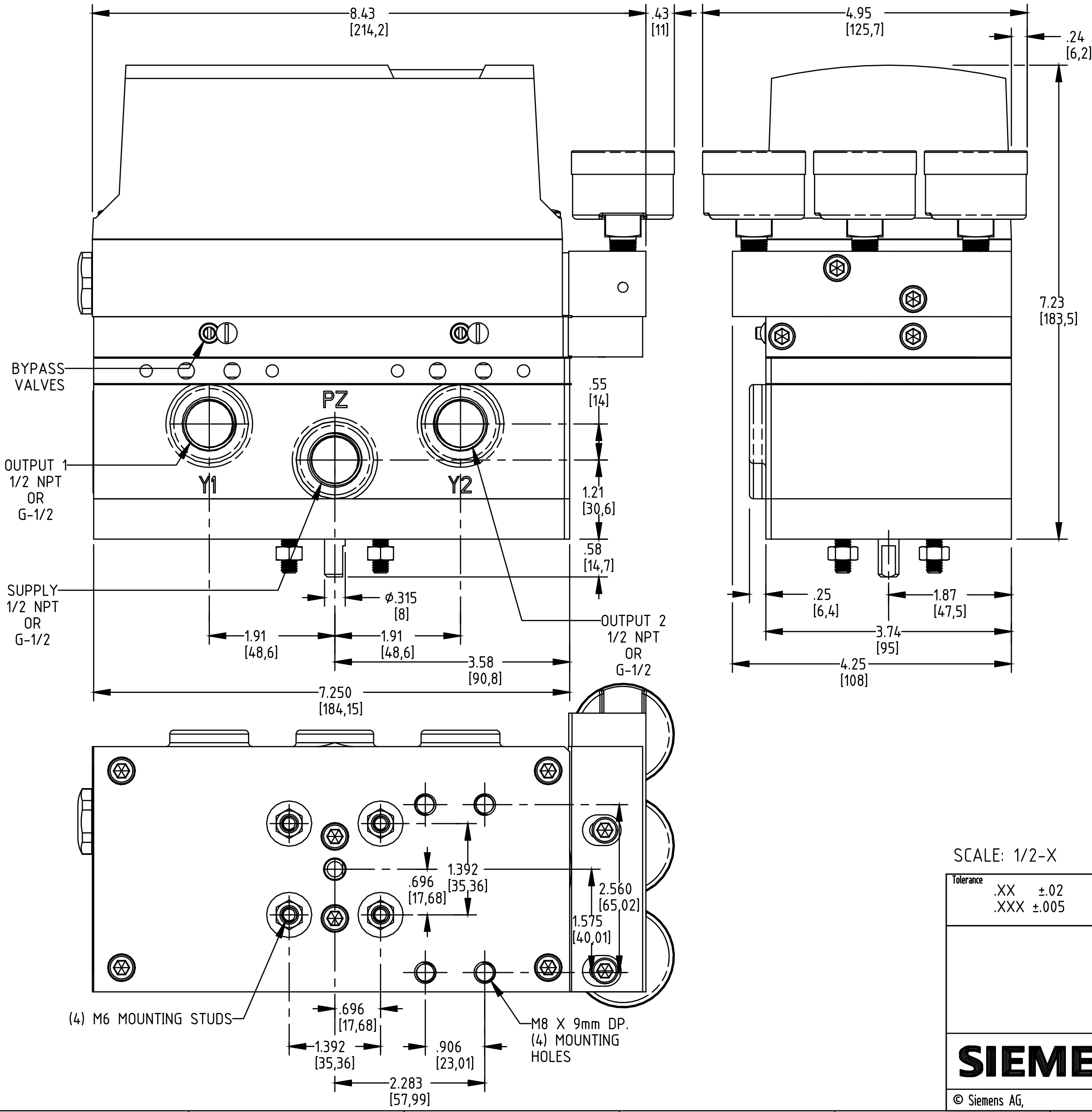
A5E34493397A Rev AB - Installation Drawing, PS2 Double Acting Booster (16230-171)

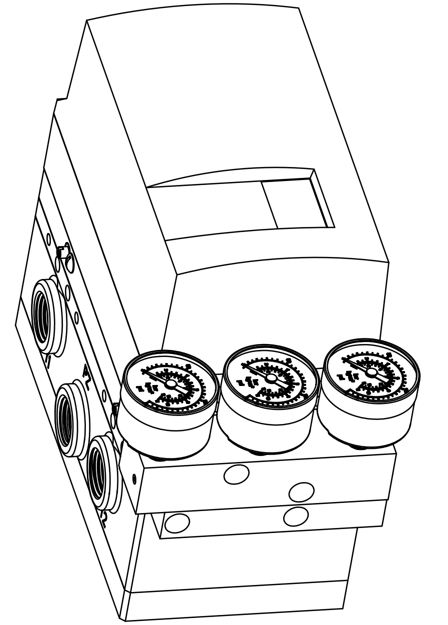
A5E34493297A Rev AB - Installation Drawing, PS2 Single Acting Booster (16230-172)

A5E34493407A Rev AB - Installation Drawing, PS2 Double Acting Booster, FP (16230-173)

A5E34493368A Rev AB - Installation Drawing, PS2 Single Acting Booster, FP (16230-174)

A5E34908432B Rev AB - Installation Drawing, Layout, PS2 Shaft Extender Use (16230-160)



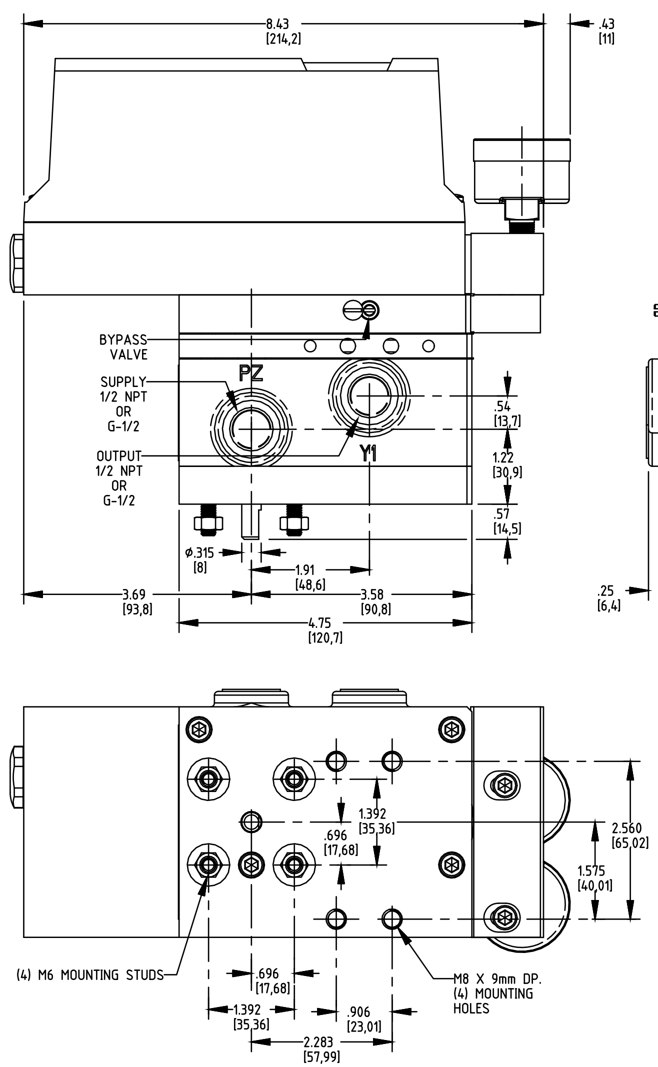


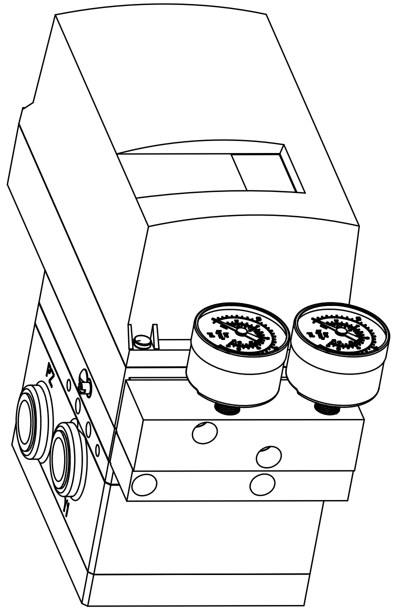
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REV.	DESCRIPTION	APPD.
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001	6/12/14 CO P5A00077074	VDB
0A	5/27/14	VDB

Field	Value
Tolerance	.XX ±.02 .XXX ±.005
Surface	
Material	SEE NOTES
Weight	0.000 lb.
Scale	1:1 inch
Author	VDB
Creator	FALSE
Approval	s. PDM s. PDM
Department	
Change Order	
Doc State	s. PDM
Revision	002
Index	
RS	AB
Project No	
Title	INSTL DWG,PS2 BSTR,DBL ACT
MLFB	
Item No	A5E34493397
Doc No	A5E34493397A
Ref No	16230-171
Doc Type	/
Paper Size	B
1st Language	en
2nd Language	de
Sheet	1 of 1

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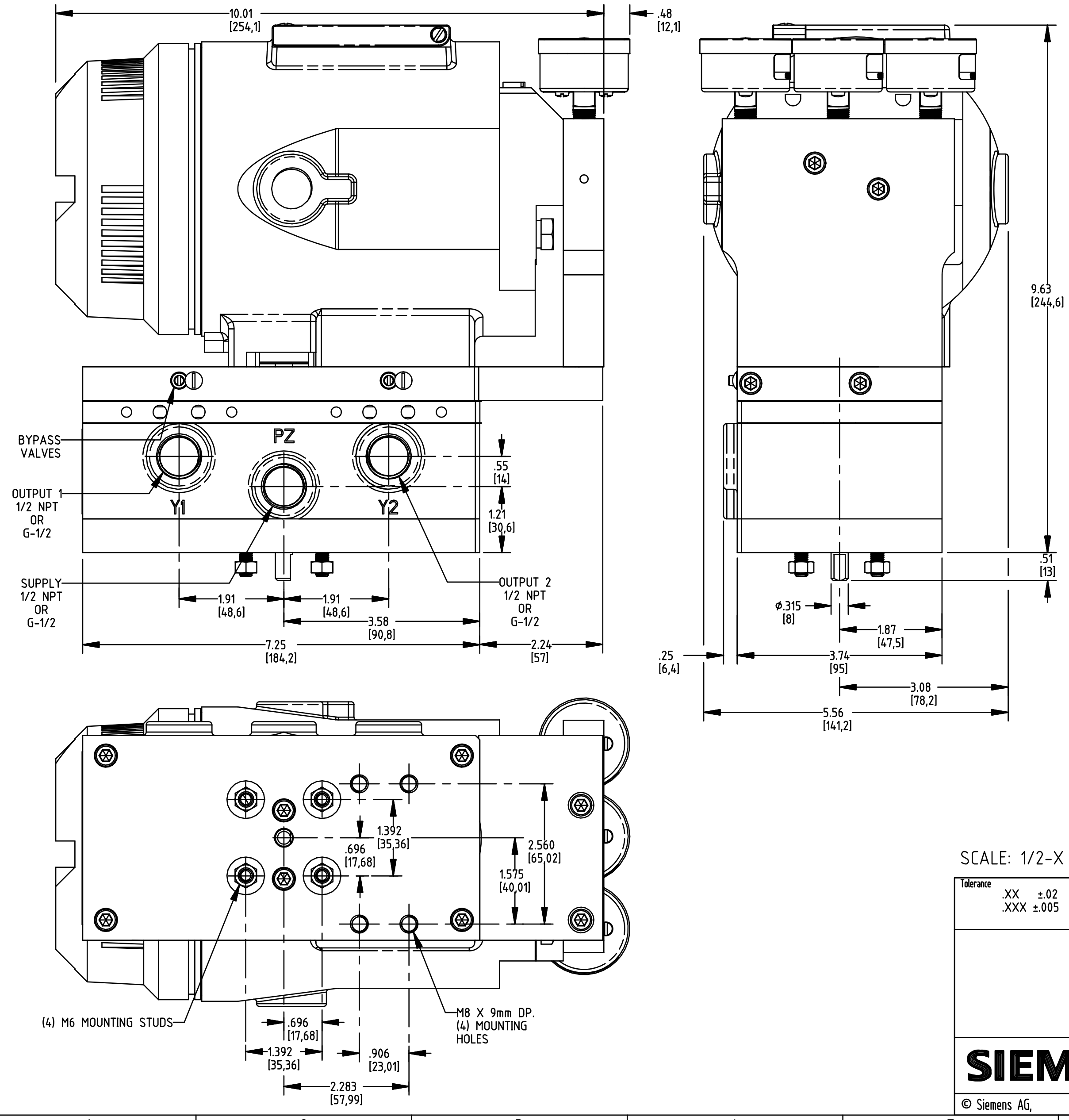


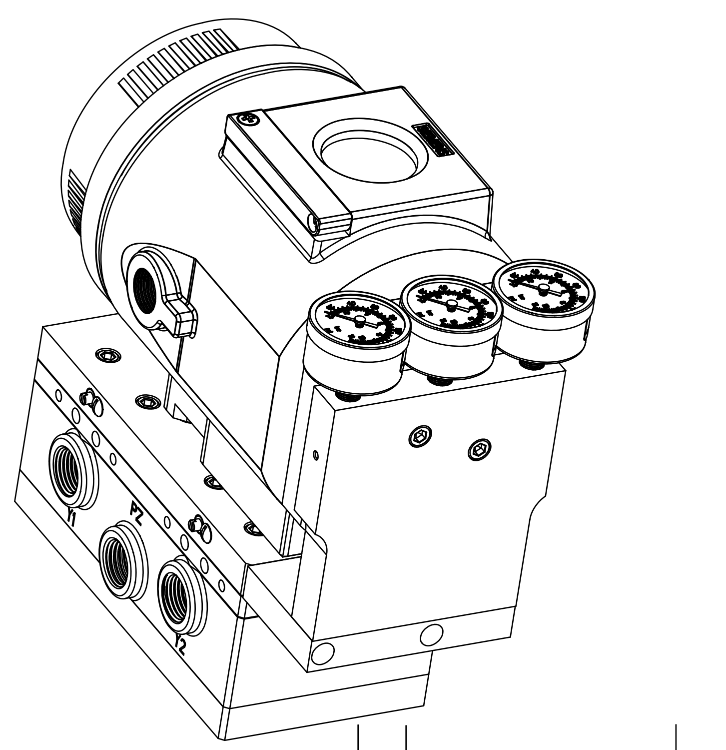


SCALE: 1/2-X

REV.	DESCRIPTION	APPD.
002	9/14/14 CO P5A00093009 ADDED REFERENCE TO G-1/2 THREADS (4) M6 STUDS WERE HEX HD SCREWS	VDB
001	6/12/14 CO P5A00077074	VDB
0A	5/27/14	VDB

Tolerance .XX ±.02 .XXX ±.005	Surface	Material SEE NOTES	Weight 0.000 lb. / Scale 1:1 inch
	Author VDB Creator FALSE Approval s. PDM s. PDM Department	INSTL DWG,PS2 BSTR,SNGL ACT	
	Change Order	MLFB	Doc Type /
SIEMENS	Doc State s. PDM	Item No A5E34493297	Paper Size B
	Revision 002 Index RS AB	Doc No A5E34493297A	1st Language en / 2nd Language de
© Siemens AG,	Project No	Ref No 16230-172	Sheet 1 of 1





REV.	DESCRIPTION	APPD.
002	9/14/14 CO P5A00093009 ADDED REFERENCE TO G-1/2 THREADS (4) M6 STUDS WERE HEX HD SCREWS	VDB
001	6/12/14 CO P5A00077074	VDB
0A	5/27/14	VDB

SCALE: 1/2-X

Tolerance .XX ±.02 .XXX ±.005

Surface

Material: SEE NOTES

Weight: 0.000 lb.

Scale: 1:1 inch

Author: VDB

Creator: FALSE

Approval: s. PDM s. PDM

Department

Change Order

Doc State: s. PDM

Revision: 002 Index RS AB

Project No

INSTL DWG,PS2 BSTR,DBL ACT,FP

MLFB

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Doc No: A5E34493407A

Ref No: 16230-173

Doc Type: /

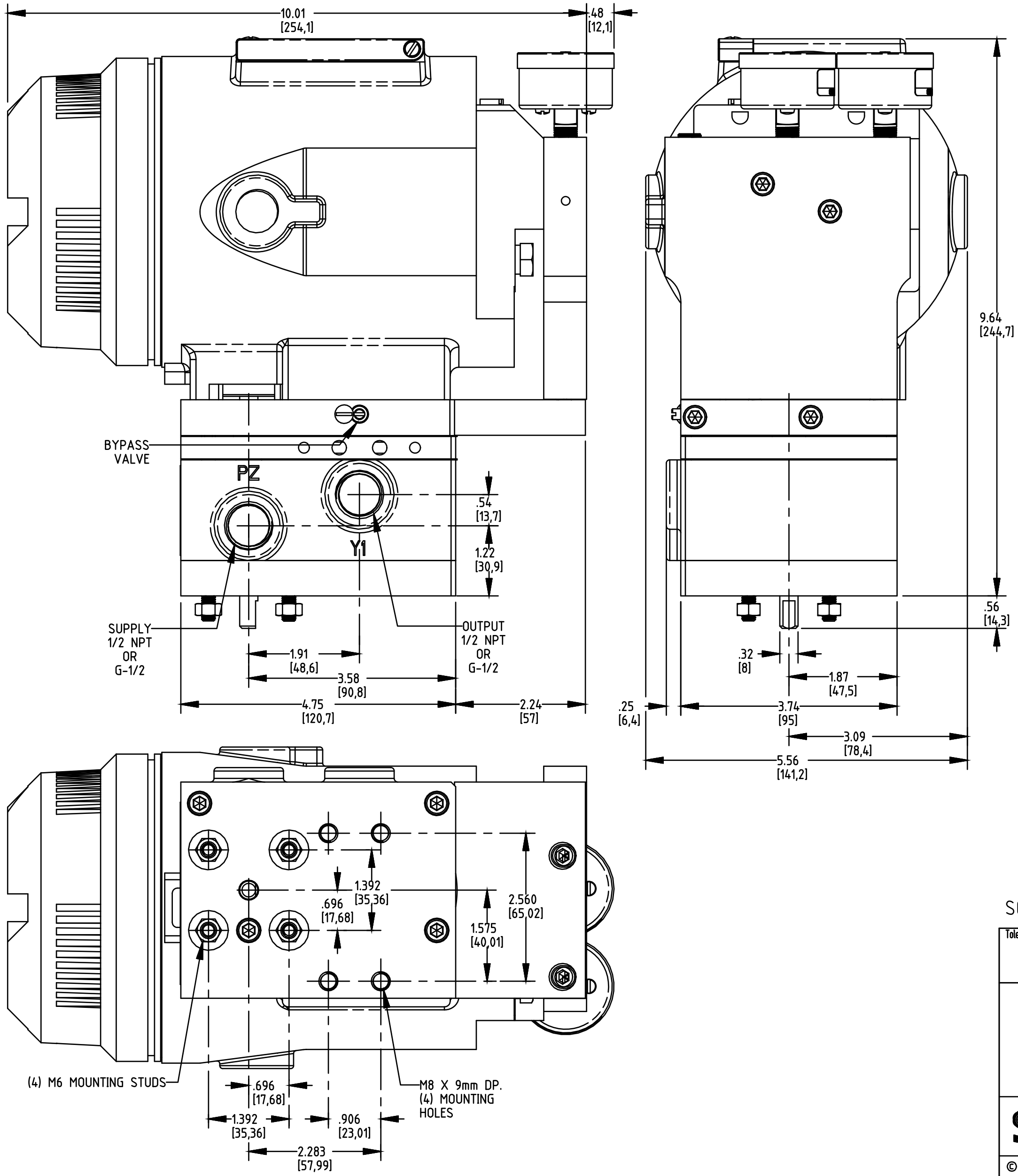
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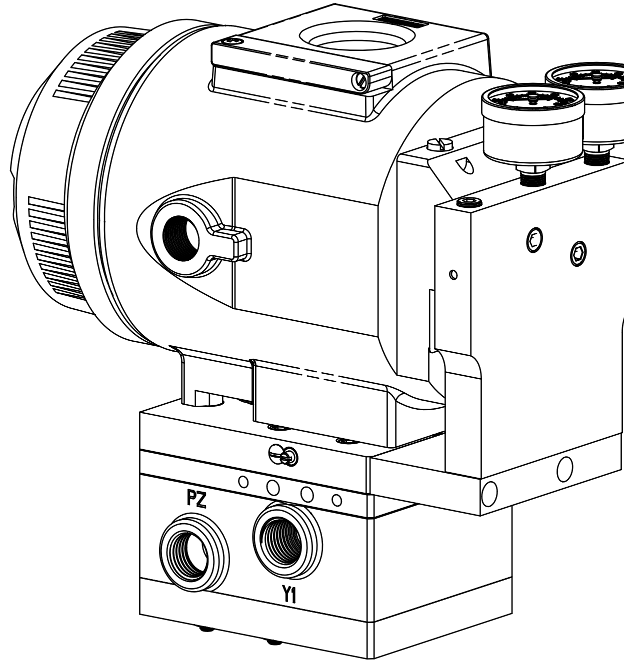
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Sheet: 1 of 1

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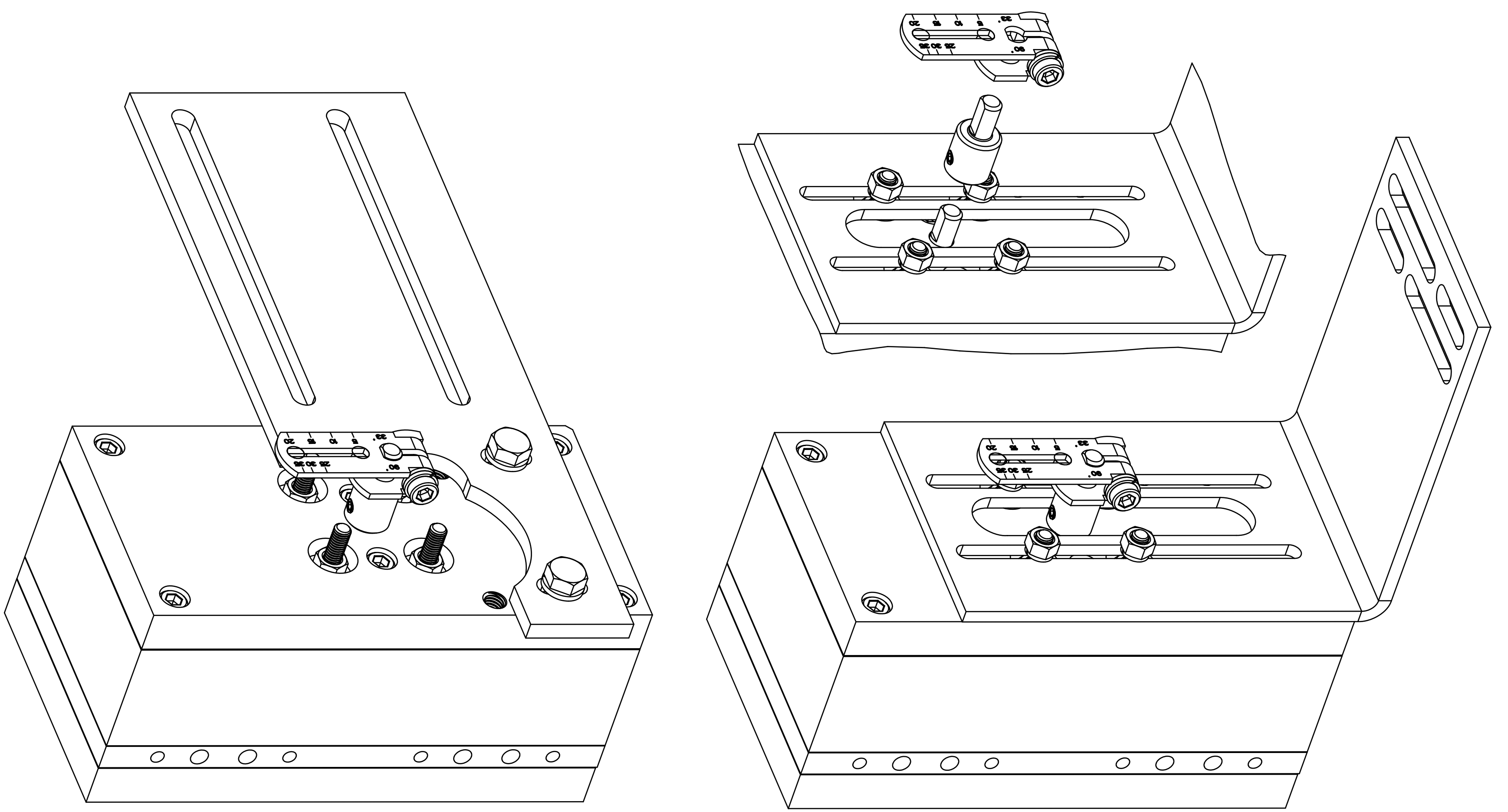
REV.	DESCRIPTION	APPD.
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001	6/12/14 CO P5A00077074	VDB
0A	5/27/14	VDB

Tolerance	Surface	Material	Weight	Scale
.XX ±.02 .XXX ±.005		SEE NOTES	0.000 lb.	1:1 inch

INSTL DWG,PS2 BSTR,SNGL ACT,FP

Author	VDB	MLFB	
Creator	FALSE	Doc Type	/
Approval	s. PDM s. PDM	Item No	A5E34493368
Department		Paper Size	B
Change Order		Doc No	A5E34493368A
Doc State	s. PDM	1st Language	en
Revision	002	2nd Language	de
Index		Ref No	16230-174
RS	AB	Sheet	1 of 1
Project No			

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SCALE: 0.7-1

REV.	DESCRIPTION	APPD.
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001	8/11/14	VDB
002	11/11/14 CO P5A00093009 CHANGED FROM VERSION 1 TO 2	VDB

Field	Value
Tolerance	.XX ±.02 .XXX ±.005
Surface	
Material	SEE NOTES
Weight	0.000 lb.
Scale	1:1 inch
Author	VDB
Creator	FALSE
Approval	s. PDM s. PDM
Department	
Change Order	
Doc State	s. PDM
Revision	002
Index	
RS	AB
Project No	
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MLFB	
Item No	
Doc No	A5E34908432B
Ref No	16230-160
Doc Type	/
Paper Size	B
1st Language	en
2nd Language	de
Sheet	1 of 1

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Index

For more information

www.siemens.de\sipartps2

Siemens Industry, Inc.
Industry Automation Division
Valve Positioner
Spring House, PA 19477
USA

Subject to change without prior notice
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Lit. No.: A5E353229820-AB
04.2015

www.siemens.com/processautomation